# THE MARINE RECORD.

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To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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## NEWLY ENROLLED TONNAGE.

Following is a list of lake vessels to which official numbers and signal letters have been assigned by the Commissioner of Navigation, for the week ended Sept. 14:

| Official No. | Rig. | Name. | TONNAGE. Gross. | TONNAGE. Net. | Home Port. | Where Built. |
|---|---|---|---|---|---|---|
| 107,191 | St. s. | Adele | 9 65 | 6 56 | Detroit | Mt. Clemens |
| 127,106 | St.y.s | Cynthia | 103 76 | 70 56 | Detroit | Detroit |
| 77,195 | St.y.s | J. S. | 7.90 | 5.37 | Detroit | Detroit |
| 28,129 | St. s. | Zenith City | 3 850.49 | 3 429.06 | Duluth | Chicago |
| 127,107 | Cat | Carrie L. | 8 82 | 8.32 | Cleveland | Pt. Clinton |
| 155,278 | Sch. | Oak Leaf | 93 06 | 82.54 | Detroit | Gibraltar |

## IMPROMPTU REPAIR WORK.

Capt. Harris arrived in harbor on Friday last with his tug Seagull. He was safe and sound, but his boat did not come through the heavy storms which he encountered quite so safely. The captain in speaking of the matter says that he was at Kettle Point making up his raft when the Wednesday gale struck him which blew so hard here, but as it came off the land it did not effect him in the least. It was the blow of the following Friday night that gave him a shaking up that he will not forget for some time. It blew a perfect gale for ten hours. He ran into Kettle Point harbor, but he was no safer there than if he had been on open water. The anchorage was good, so he dropped his anchor, but it would not hold, and he was fast drifting on the rock when he threw out the other one, which held a short time, when the chain parted and the stern of the boat struck the rock, breaking the rudder, and injuring some of the plank in her bottom which started her to leak. Fortunately steam was kept up and the engine was put in motion, which kept the craft off the rock until the wind abated. The rudder was then taken off and teamed back into the country, where there was a blacksmith who made the necessary repairs After it was again put in position the captain ran down to Sarnia, where he secured another anchor and then went back, hitched onto the raft, which had in the meantime again been repaired, and brought it down to Marine City safely.—Wallaceburg Herald.

From the New York Marine Journal.

## A DOWN EAST SHIP BUILDER OUT WEST.

CLEVELAND, O., Sept. 14, 1895.

*To the Editor of the Marine Journal:*

I am troubled in spirit! all the romance in shipbuilding was taken out of me to-day, while visiting the Cleveland Ship Building Company's yard. I had not been in a modern yard for fifteen or twenty years. Then the ribs were shaped from keel to gun'l, in one piece, and you could see some symmetry of shape, even in the primary stages of construction. To-day I look on 418 feet in length, a part of the floor completed, some sections receiving floor and foothooks, and then one dead level of top construction, making of the bottom (say three feet average depth), one huge (subdivided) water tank (ballast). This ship (steam) will draw 3 feet light with ballast 7 feet, and carry 5,000 tons of ore. Machinery does a large portion of all the work, punching, shearing, lifting, placing, hugging, everything except designing. That as in our past observations of lake construction was always on the lines of utility, and not for symmetry; we never accused them of wasting any labor on that, in the old days. In fact one "Down East" shipmaster told me with solemn face, that he passed Hatteras in rough weather 24 hours after a lake built craft that we loaded, had passed, and the water was still smooth in the wake she had left. (It wasn't "Steve Babbidge" who told the story either.) I guess they are building strong boats now, if good steel and plenty of rivets produce that result. But there is no music in metallic thuds, and we who are on the gray side must give place to the thuddists of to-day, who show us how to carry 5,000 tons with the expense not increased above cost of moving 1,000 five years ago. Shipyards 1,000 feet long and 100 feet wide suffice for room to construct two five thousand tons capacity steamships, and a little "crik" 60 feet wide suffices for room to launch them! Neptune, good night. Ben! yoke up the oxen, let's drive home.

"WOOD-CHUCK."

## NOTES.

THE cruiser Brooklyn will be launched Oct. 2.

THE Cramps have declined to dock the battleship Indiana at Port Royal, and she will have to go to the British dock at Halifax.

THE principal newspaper of Japan, the Jiji Shimpo, urges upon the government the advantages of Japan buying war vessels in the United States. There are many reasons given for this course, among them being the first class quality of the American vessels in every regard as war craft, the sound policy of buying vessels from a country having the least chance of becoming involved in Asiatic complications, and from a country that is already about the best customer for Japanese products.

SHIPPING, a highly illustrated English marine magazine prints in its issue of September 1, a picture of the whaleback steamer Christopher Columbus, and describes her as a "typical American river steamer." This magazine also contains a highly interesting criticism of the Cunard line management for over rating and valuing the tonnage owned by this company, and pointing out the reasons why "regrets," instead of dividends, are being disbursed among stockholders by the directors.

A STEERING telegraph, invented by Lieutenant Fiske, U. S. N., is being applied to United States naval vessels. Transmitters placed in the pilot house, on the bridge and in the conning tower are connected dependently to two receivers, or indicators, one near the steering engine and one near the hand wheels on the after part of the upper decks. In event of an accident the helmsman has simply to step to a transmitter of the steering telegraph and move the little lever exactly as though it were the helm of the ship, thereby indicating to the man stationed at the steering engine (or hand wheels) exactly how he wishes the helm to be placed. Each indicator, or receiver, is simply a very large galvanometer, of which the needle moves over a scale that is marked "port" and "starboard" and is graduated in degrees of angle.

## PERSONAL.

Mr. James Graham, the Detroit fuel dock manager, spent a couple of days in Cleveland last week, looking after his trade.

President William Livingstone, of the Lake Carriers' convention was in attendance at the sessions of the deep waterways convention this week.

Capt. Charles Tuffts, keeper of the U. S. life-saving station at Ludington, has gone, under orders from Gen. Supt. Kimball, at Washington, to the Atlanta Exposition, to take charge of the life-saving exhibit to be made there by the department.

The firm of Fisher & Porter, will be dissolved by mutual consent on September 30th. Mr. Albert Fisher will retain their present office, Room 1025, Monadnock Block and will represent Wm. Todd & Co., of Youngstown, O., on their high grade and heavy duty engines, rolling mill and blast furnace machinery. Mr. H. F. J. Porter, will retain the agency of the Bethlehem Iron Co., and will move to Room 1433 Marquette Building.

## THE LONG COAL CAR DUMPING MACHINE.

(ILLUSTRATED.)

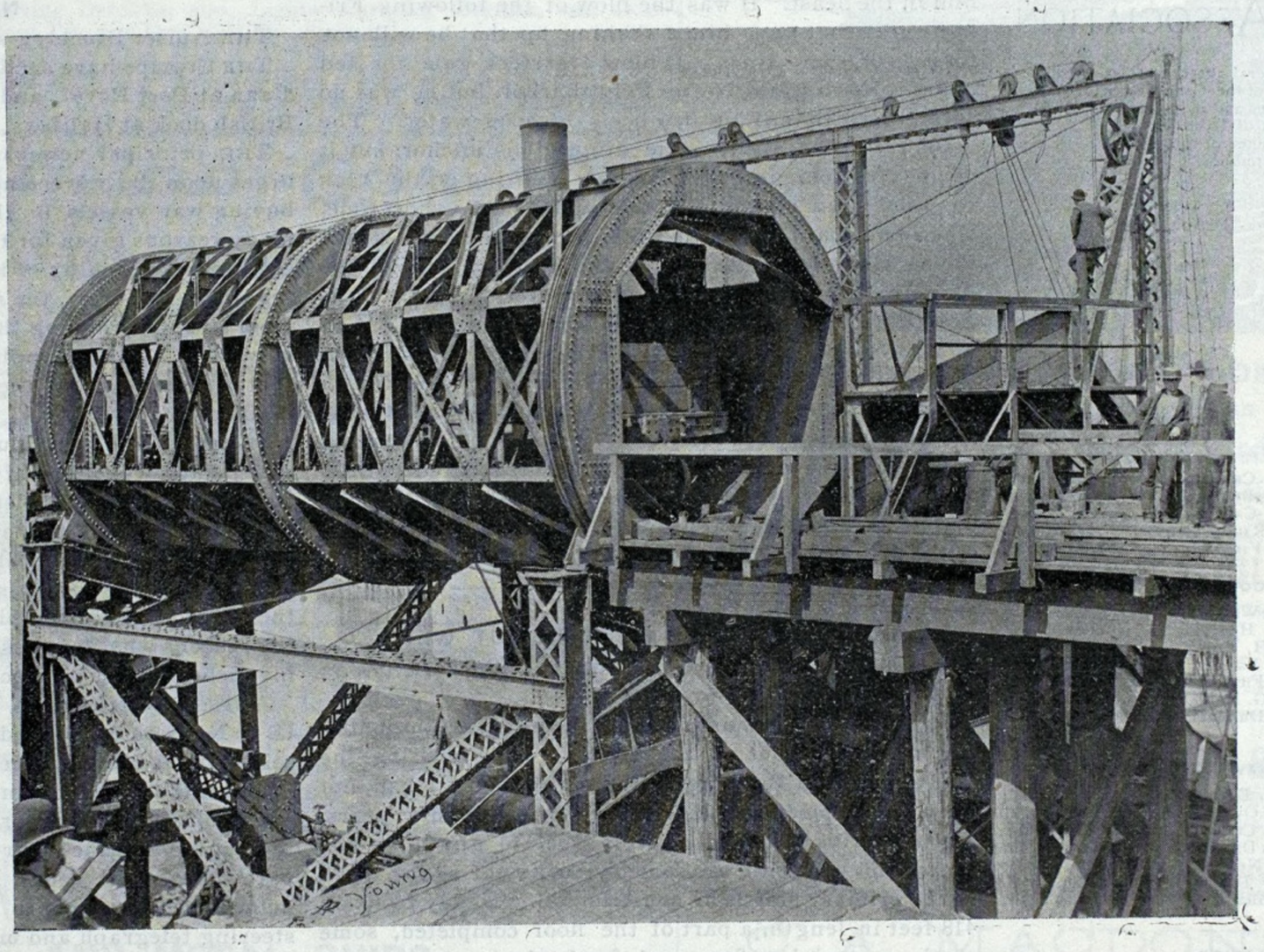
While there has been a great deal said in the trade press about various coal dumping machines, and the number that were to be erected here, there and elsewhere, a quiet little group of men have been putting capital and energy into a machine which they have only recently brought to completion, but which has already shown itself to be a very practical success. This machine has been erected by the Excelsior Iron Works Co., Cleveland, upon the N. Y. P. & O. coal dock, just below the Columbus street bridge, on the west side of the Cuyahoga River. Several boats have been placed under this machine during the past ten days, and the work done has proven eminently satisfactory.

The machine is the invention of Mr. Timothy Long, who has been connected with the Excelsior Iron Works Co. for a number of years in a mechanical capacity. Mr. Long has been handling coal and engineering on the river and for the Excelsior Iron Works Co. for the past twenty years. Among other of his numerous inventions he invented the Long patent bottom dump coal bucket and the steam clam-shell bucket, which are pronounced the best buckets in existence. The car dump consists mainly of a large cylinder, with an inside diameter of 11 feet, and an outside diameter of 16 feet, the length being 40 and the circumference being 52 feet. This is set 28 feet above the level of the dock, but on a level with the company's tracks, one of which runs through the cylinder when the latter is at rest. The coal-laden car is set in the cylinder by means of a switching engine, and by the time the car is detached from the train it is clamped firmly by means of a beam running along the side. This beam acts by hydraulic pressure, and the car is also held rigid by four iron clamps which fall upon the top of the car's sides, and which are firmly held in place by keys fitting in cogs. These clamps act automatically when the cylinder begins to roll.

This clamping process is the work of an instant, and by means of a lever worked from the end of the cylinder, and plainly shown in the engraving on this page, an engine on the dock level is started. This engine has a cylinder 30 inches in diameter by 19 feet stroke of piston, and a single stroke is all that is necessary to roll the cylinder up an inclined plane into the position shown in the engraving on the opposite page, when the coal rolls out compactly into the chute. When the coal leaves the car, the chutes are not in the position shown in the picture, but stand out horizontally, which prevents the coal acquiring any momentum. As soon as the cylinder begins to roll back the chutes are gently lowered by means of another engine on the dock level, and operated by a man standing between them, until the coal is allowed to pour gently into the hold, the breakage being thus reduced to a minimum which is something less than when it is handled by being shoveled into buckets, and then dumped into the hold by means of "whirlies." Both the cylinder and chutes are operated by wire cables, and the principles of the whole machine are so simple as to add greatly to its value, there being no complicated machinery to get out of order. The cylinder is made absolutely accurate in its movements by a series of four-inch holes being bored in the perimeter near each end of the cylinder, which fit upon cone-shaped pins on the inclined track. This gives all the advantages and none of the disadvantages of a cog-wheel arrangement.

The machine on the Nypano docks is not yet entirely in a state of perfection. It was decided not to put in the hydraulic pressure until it was seen just how high the longitudinal beam should be hung in order to clamp the cars at the proper place. This has been adjusted, and in the meantime the beam, which is suspended from swinging iron supports, is drawn out by hand, and wedges dropped in behind. All this, of course, consumes more time than would be required by the hydraulic process, which will be in operation in a few days, but even with this disadvantage the machine has made a record of five cars in eleven minutes. The steamer Yale was loaded Thursday last at the rate of eighteen cars an hour. The machine, when the hydraulic apparatus is put in operation, can without doubt, load at the rate of thirty cars an hour, and keep it up while the cars last.

The Nypano dock, by reason of its general arrangement, is especially well suited to the machine in the matter of car supply. There is ample room for storing fifty-five loaded cars on the dump's dock, and twice as many more within reach of the machine, and the empties are kicked out at the other end of the machine, and can be sent to one of the ore docks at once for their return load. This quick release of the equipment is a feature much appreciated by the railroad companies and reacts in that it enables the railroad companies to get the coal forward from the mines more rapidly.



THE LONG CAR DUMPING MACHINE.
Built by Excelsior Iron Works Co., Cleveland.

The great points in favor of the Long Coal Car Dumping Machine are as follows: The machine operates as rapidly or more rapidly than any of the other machines built for the same purposes; the device empties cars of all sizes, in any order, without adjustment being necesary; and coal breakage is reduced to an absolute minimum. The machine is comparatively cheap as to its first cost, and is economical of operation. The construction, while solid is not complicated and can be erected at low cost. Only three men are required; these are the engineer, or fireman, a man to operate the cylinder, and a third to operate and control the movements of the chutes. The machine has duplicate boilers, one for use in case of emergency; but the entire apparatus is operated with only 80 pounds of steam. The real economy of this machine is, therefore, more easy of demonstration than any other. The workings of the machine have at all times proven especially successful. The stoppages usual to any new type of machine have of course occurred, but the changes necessary were very trifling in character, and in no way reflected upon the usefulness of the machine, even in the eyes of competitors. These stoppages have been unusually few in number, however, and the machine is kept working whenever the coal and boat are at hand.

Mr. George W. Short, who is president of the Excelsior Iron Works Co., and also president and general manager of the Long Manufacturing Co., engaged in the construction of the new machine, has given the building of the car dump a great deal of his personal attention for more than a year past, and is positive that the machine is bound to be a success. What is still better, he has had no trouble in convincing all who have had the good fortune to see the machine in operation that it is going to beat anything in its line. The Excelsior Iron Works Co. is preparing to construct several more of the machines, to be erected where it is desired, at several of the lower lake bituminous coal-shipping ports, as well as in the East.

The Cleveland machine is operated by the Erie Coal Transfer Co., of which Mr. Frank M. Osborne, of Osborne, Seager & Co., is president; E. A. Upstill, of Walsh, Upstill & Co., is secretary; and C. W. Baine, of Morgan, Moore & Baine, is treasurer.

## THE FREIGHT SITUATION.

The situation in freight circles is much the same as a week ago. A few special ore charters from the head of the lakes were made late last week at $1.40, and one or two this week at $1 30; but until Wednesday $1.25 was the ruling rate, and any advance to-day will only be to $1 30. Several shippers say they will not pay over $1.25 for the rest of theseason, but this is considered buncombe, in view of the cries from the furnaces and the large amounts of ore yet to come down. The other rates quoted are $1.10 from Marquette and 85 cents from Escanaba.

The soft coal rate to the head of Lake Superior has been weakened, as THE RECORD predicted last week, by the advent of rough weather, and shippers have obtained so many boats at 35 cents that they claim the rate has gone back to that figure and will remain there. Lake Michigan freights continue strong at former rates.

The shape grain is in will best be explained by the visible supply table to be found elsewhere. The wheat rates remain at 4 cents from Duluth, and 2½ cents from Chicago to Buffalo.

## NEW PATENTS.

Following is a list of new patents which have been recently awarded on inventions bearing on navigation, marine trade and relative matters:

546,057. Buoy. Frank Richard, New York, N. Y. Filed Apr. 12, 1895. Serial No. 545,455. (No model.)

546,309. Mechanism for Propelling and Steering Vessels. Ernst F. H. Demnitz, Nieder-Sedlitz, Germany. Filed Dec. 19, 1894. Serial No. 532,362. (No model.) Patented in Germany Feb. 4, 1895, No. 79,331.

546,545. Steam Garbage-scow. George W. Melville, Washington D. C. Filed May 3, 1895. Serial No. 548,049. (No model.)

546,586. Dredger. William H. Diestelhorst, Redding, Cal. Filed Feb. 27, 1895. Serial No. 539,921. (No model.)

A full description of these patents can be obtained by sending to the Patent Office, Washington, 14 cents for each, and mentioning THE MARINE RECORD.

## HYDROGRAPHIC CHARTS

Of Lakes Erie, Ontario, Superior, Huron, and St. Mary's, St. Clair and Detroit Rivers, for sale at the office of the MARINE RECORD, No. 144 Superior street, Cleveland. Prices 75 and 50 cents each.

# NEWS AROUND THE LAKES.

## CHICAGO.

*Special Correspondence to The Marine Record.*

Carr & Blair chartered the John F. Eddy for corn to Buffalo at 2c; F. L. Vance, barley to Buffalo at 2c. P. H. Fleming & Co. chartered the City of Berlin, for barley to Buffalo at 2⅛c. J. G. Keith & Co., chartered the steamer M. H. Boyce for oats to Buffalo at 1¾c; barge Celtic, wheat to Toledo at 2¾c; steamer Schlesinger, corn to Erie at 2c, the schooner J. H. Mead, corn to Port Huron at 1½c; steamer Elfin-Mere, corn to Buffalo at 2c; steamer Neosho, corn to Buffalo, at 2¼c.

Lumber freights from Manistee to Chicago were advanced on Monday to $1.25 per one thousand feet, and to $1.37½ cents from Ford River to Chicago.

Capt. J. S. Dunham's schooner James G. Blaine, which left here last Friday with grain for Port Huron, arrived there 75 hours after leaving Chicago.

Captain Harry Richardson is in Chicago awaiting the arrival of the steamer Viking and tow.

South Chicago will soon have seven grain elevators, with storage capacity for 10,000,000 bushels of grain. Two of the elevators are controlled by Bartlett, Frazier & Co., two by Hornstein Brothers, and three by Charles Counselman. The erection of the elevators will give Chicago a storage capacity of over 40,000,000 bushels of grain, and should an emergency exist, room for 10,000,000 bushels more can easily be secured by using all the small private elevators in the various parts of the city.

## BUFFALO.

*Special Correspondence to Record.*

Another change in the official roster of the Northern Steamship Co. occurred this week. Capt. James H. Killeran, marine superintendent of the line, handed in his resignation. He will remain with the line some little time, but will hardly stay until the end of the season. Capt. Murch, of the Northern King, who has held responsible temporary positions under this company, and Capt. Wesley Brown, who sailed the North West, are both talked of for Capt. Killeran's place.

Representative W. A. Stephenson, of Michigan, chairman of the House River and Harbor Committee, visited Buffalo last week and on Thursday made a trip of inspection over Buffalo harbor. He was accompanied by a number of local marine men of prominence and expressed his sense of the inadequacy of the harbor facilities and the great need for their improvement.

Buffalo is much stirred up over the announcement that the New York Central is behind the Erie canal boat men's combine. The result will undoubtedly be higher canal rates this fall, something very much to be desired; but whether the railroad will retain its hold after the close of navigation this season seems very doubtful.

## DULUTH AND SUPERIOR.

*Special Correspondence to The Marine Record.*

Coal cargoes continue to come in very fast. Receipts were about 90,000 tons as against 100,000 the previous week. Two Harbors received three cargoes of 3,010 tons. Inquiry from the country has not been so great as at present in years, and the companies are looking forward to a good winter trade in the West and Northwest. Shipments have been greatly stimulated by the heavy wheat receipts at this point, which are greater than ever before in the history of the trade. As yet much of the coal is for railroad purposes, it being too expensive to take the cars back empty.

The tug Pathfinder is in Inman's dock, and is being put in shape for business again. She was filled with sand and her pilot house was carried away.

Coal men look for an increase in the retail price of anthracite. It will probably be raised from $5.50, the present rate, to $6. The coal is coming in rapidly, and wholesale dealers say there will be no shortage this year.

Chapter 248, of the general laws of Minnesota for 1895, requires that owners of steam vessels owned or docked in Minnesota and doing business in international waters shall pay three cents per ton of their registered tonnage, such payment to be in lieu of all other taxes. The state auditor announces that his receipts from such payments are just $71.08. It is said that the Solons of St. Paul thought the bill meant a tax of three cents upon every ton of freight handled; but the law literally demands a tax of three cents per net registered ton. A vessel of 100 tons burden would, therefore, pay $3 taxes. The Inman tug line, with 20 tugs, for instance, pays a total tax of $58.45. The other rendering of the law would impose an unjust levy upon vessels registered and paying taxes in other states, but which might "dock" at Duluth 25 times in a season.

The North Land arrived Friday evening last, and after discharging her passengers, was put in winter quarters at Culver's dock.

In the libel suit brought by the owners of the steamer Nyanza against a cargo of coal consigned to the Pioneer Fuel Co., the demurrer of the consignee has been overruled by Judge Nelson. He decides that the only question is whether there was an understanding that the discharge of the cargo was a waiver of the lien. From the language of the libel, His Honor decides that the delivery was not unqualified and absolute, as the libelants notified the consignee that they would look to the cargo for freight and demurrage.

## CLEVELAND.

The indications continue to grow that the Baltimore & Ohio will construct elevators and make Cleveland the receiving port for a large quantity of Northwestern wheat. The B. & O. has advantages over the Chesapeake & Ohio, Norfolk & Western, and other southern roads in the matter of haul, and as the company controls its own steamship lines on the Atlantic, it could easily carry the wheat for what appears a long distance as compared with the Buffalo-New York route.




THE LONG CAR DUMPING MACHINE.
In operation at the Nypano Coal Dock, Cleveland.

The river commission has very properly recommended a ninety-foot opening when the Center street bridge is rebuilt. If such precautions are constantly taken, the river will never be closed up as is Chicago river.

Capt. Frank Stenton is sailing the F. & P. M. No. 5, on Lake Michigan.

Capt. William Faragher is only now recovering from a serious hurt received on August 31. The schooner H. D. Root, which Capt. Faragher owns and sails, was loading hay at Pelee Island, when a bale fell and knocked Capt. Faragher into the hold. The captain sustained a bad fracture in the left hip which is just now knitting, and also received a severe bruise on his left side. His son, Mr. Burton P. Faragher, a member of the boulevard engineer corps, is in command during his father's illness.

## FLOTSAM AND JETSAM.

Last week Milwaukee received 21 cargoes and 34,881 tons of coal.

The hull of the burned Cibola, of the Niagara Navigation Co's line, has been raised and towed to Toronto.

Ashland ore shipments to last Saturday night were 2,000,971 tons, 262,381 in excess of last year's total, and greater than the total of any previous year.

Mrs. Emily Slauson claims to own $25,000 worth of dock property at Racine, and is trying to oust the Goodrich Transportation Co., which is resisting in the courts.

The Canadian government will, it is said, make extensive harbor improvements at Collinwood, and the town itself, it is averred, will pay $25,000 toward the work.

W. H. Boutell, of Bay City, has purchased the steamer Charles Eddy from F. W. Wheeler & Co., who took her from the Eddy-Shaw syndicate as part payment on the Penobscot.

The wrecker Johnson has given up the attempt to find the schooner John Shaw, Capt. O'Keefe is fully satisfied that the Shaw did not sink off Harrisville, as was reported, as he has dragged every foot of the bottom for some distance from shore.

The much-talked-of race between the steam yacht Bonita, owned by Mark Hopkins, who is also managing owner of the big freighter, resulted in the Bonita giving up after running alongside of the Centurion for over an hour, and unable to pass her.

Gen. Poe's recommendation for the extension of the city harbor line from Smith's coal dock down to the village of Ecorse has been approved by the Secretary of War. The extension will be principally an accommodation to the Selvey Process Co., which is located below the Hall brickyard.

A delegation of Toronto vessel owners has gone to Ottawa to wait upon the minister of railways and canals. They complain that the water in the St. Lawrence River canals is sometimes as low as 6 feet 5 inches, and navigation is seriously impeded. They will also protest against the Welland Canal rules, which they regard as unsatisfactory.

E. W. Voight, a Detroit brewer, who owns the upper end of Grosse Isle, wants to put up a swing bridge, between the island and the mainland, to let the Wyandotte & Detroit River Railway upon the island It is said that the bridge scheme will be fought by other than marine circles.

The big steamers S. S. Curry and Merida passed through the Sault canal at 7:30 Friday morning, and then had a long test of speed. The Curry reached Ashland Saturday at 9:30 a. m., five hours ahead of the Merida. The time of the Curry was 21 hours and 45 minutes, breaking all previous Lake Superior records.

The slight break which occurred in the miter sill of the upper guard gates at the Sault is being repaired without trouble. The cause of the break was that the masonry was not batted together, as had been done in the old lock. The holes can be drilled in the sill and the bolts inserted in a week's time. The Canadian lock sills are not bolted, and there is some uneasiness on that side lest a similar break might occur.

Capt. Donavan of the mail steamer Florence B., in Detroit River requests that in all cases, but especially when there is a heavy sea the river and the boats bound up or down are grouped, that the master of any steamer having mail to deliver and for whom there happens to be nothing in return, the captain shall give one long and one short blast of the whistle. In the case of a schooner it is asked that she display her colors in the daytime and swing a lantern at night.

The Lake Shore Railway's old pile bridge at Ashtabula burned Sunday night. Lake Shore officials hurried to the spot, realizing that lake traffic there would be almost suspended, and began cleaning away the ruins before daylight. A temporary structure is being erected, and was ready for use by Wednesday evening. The fire is thought to have been incendiary. The permanent structure to be erected this winter, will probably be a swing bridge. There was enough coal and motive power beyond the bridge to keep dock work going.

There is a rumor that the Hurson Line of Milwaukee has leased the steamer Lora, and will add her to that fleet this fall. The Lora has been doing a good summer business between Manistee and Gladstone.

THE four books of "Sailing Directions," published by the Hydrographic Office, covering Lake Superior and St. Mary's River, Lake Michigan and the Straits of Mackinac and Lake Huron and Lake St. Clair with Detroit and St. Clair Rivers, north channel of Lake Huron and Georgian Bay, can be had at the office of THE MARINE RECORD, 144 Superior street, Cleveland. Price, $1.00 each.

## NEW YORK'S CANAL IMPROVEMENT.

The executive canal committee that has in charge the work of preparing canal literature so that voters at the coming election may appreciate the importance of the canal improvement bill, which is to be voted on in New York, has prepared a statement that will be thoroughly circulated in pamphlet form. In part the statement follows:

"It is proposed to make the Erie and Oswego canals nine feet deep throughout, except where locks, culverts, aqueducts and permanent or costly structures exist. At these places it is proposed to make the Erie only eight feet deep, by raising the banks one foot, but without disturbing foundations. In the rest of the canal the bottom will be excavated one foot and the banks raised one foot higher. Precisely the same improvement will be made to the Oswego canal. It is intended to make the Champlain canal seven feet throughout by excavations.

The Erie canal connecting Lake Erie with the Hudson river, is 352 miles in length, and at present 70 feet wide on surface, 56 feet wide on bottom and 7 feet deep. The locks are 110 feet long, 18 feet wide and 7 feet deep, and accommodate boats 98 feet long, 17½ feet wide and drawing 6 feet of water, which boats carry loads of 240 tons each. The Oswego canal is exactly like the Erie in size, and in the size of locks. It begins at Oswego, on Lake Ontario, and joins the Erie at Syracuse, being 38 miles long. The present size of these two canals was begun just 60 years ago and completed 33 years ago. The Champlain canal begins at Whitehall, at the foot of Lake Champlain, and joins the Hudson river at West Troy, being 66 miles long. It is 50 feet wide on surface, 35 feet wide on bottom and 5 feet deep, accommodating boats drawing 4 feet 8 inches. The locks are of the same size as the locks of the Erie and Oswego canals. The present size of the Champlain was provided for in 1860, and completed in 1875.

Apart from lengthening some of the locks of the Erie canal to twice the original length, nothing has been done in the way of improvment since 1862. Meanwhile the canals have been permitted to fill up until the Erie and Oswego are scarcely six feet deep, and they have not been properly cared for for years. During this period of stagnation on the canals, the railroads have been developed to their utmost capacity by the most liberal expenditure of money, the New York Central Railroad having spent in one year in roadbed improvements as much as is required to improve all of the canals.

Last year the Constitutional Convention was induced to submit an amendment to the constitution to the voters, authorizing the legislature to improve the canals. Fortunately that amendment was submitted separately. It received a majority of 115,343 votes, which majority was 32,000 larger than was given to any other amendment. Governor Morton, in his inaugural message, urged the legislature to provide for the improvement of the canals. So a bill was framed, providing for the issuance of bonds, to run for 17 years, and to bear interest at 4 per cent, to raise the necessary $9,000,000. This bill was passed by a vote of 103 for and only 35 against, and was approved by Governor Morton. All bills creating a debt in excess of a million dollars must be approved by the people, so, at the next election the voters will be called upon to finally decide the matter.

Last year the canals carried 3,882,560, tons of freight. In 1872 the canals carried 6,673,370 tons of freight. In 1872 none of the locks had been lengthened, steam was unknown on them, and the double boat system was unknown. The latter is a system by which two boats are rigidly fastened together and navigate as one boat, requiring no more power for their propulsion and no more men to handle them than one boat required in 1872. There are about 75 steam canal boats now navigating the canals, towing from three to five boats, and forty of the seventy-two locks have been lengthened, so that the double locks may lock through without unfastening.

## NEW SALT WATER TONNAGE.

Messrs. Harland & Wolff, Belfast, have secured an order from the Hamburg American Steamship Co. for a twin-screw steamer of 20,000 tons burden. She will have accommodation for 200 cabin and 1,500 steerage passengers. She is chiefly to be employed for freight. The vessel when completed will be the largest in the world, and is to be delivered in ten months.

The North German Lloyd Company has determined to build for the transatlantic trade four large twin-screw steamers. The new vessels are all to be constructed in the fatherland. These steamers will not equal in size either the latest Cunarders or the two new American liners, the St. Louis and St. Paul. Their dimensions are to be:—Length, 528 feet; breadth, 60 feet; depth of hold, 30 feet; mean draught, 26 feet. The cargo space will probably not exceed 470,000 cubic feet. They will be provided with elegant cabins for 72 first-class and and 95 second-class passengers, while there will be accommodation in the steerage for 650. Should the requirements of the trade necessitate it, the internal fittings of the vessels can be so arranged as to make provision for 2,650 steerage passengers.

MARINE RECORD Life Savers' Series.

## THE KEEPER AT POINT AUX BARQUES.

(ILLUSTRATED.)

That part of Lake Huron in the vicinity of Point aux Barques is the probably the scene of more wrecks during stormy weather than any other locality on the Great Lakes. True, the vessels that meet disaster there are, usually those of the older and smaller class, but they carry people on board, and the work of the life-saving crew at this station is one of constant watchfulness. It is necessary, therefore, that the station should be in charge of an energetic and capable man, and such as Captain Harry D. Ferris has shown himself during his twelve years' service as keeper there.

Captain Ferris was born at Lockport, N. Y., August

CAPT. HARRY D. FERRIS.

1, 1855, and is therefore something over forty years old although he dosen't look it. He went to Alpena, when about 18 years old, and engaged in gill-net fishing for several seasons. He entered the life-saving service at Thunder Bay Island station April 1, 1878, and remained in the service at that station until November, 1881. He was then transferred to the Sand Beach station, and remained there until September, 1883, when he was again transferred and promoted, being made keeper of the Point aux Barques station. All through the fall gales the deeds of the Point aux Barques crew are often mentioned in the daily newspapers, and the readers may always be assured that Captain Ferris was in the thick of it with his men.

THE Ammen ram Katahdin carries a new life buoy, the invention of Chief Constructor Hichborn, and it is attracting much attention. It consists of a copper cylinder, bent into a circle, and from the side depends two cylinders, containing a chemical compound, which, as soon as the life-preserver is thrown into the water, gives forth a light—the result of chemical combination. The light not only enables one struggling in the water to locate the buoy thrown to him, but enables his shipmates to find him after he has reached the buoy, should he have gone overboard in the night.

## NATIONAL BOARD OF STEAM NAVIGATION.

The twenty-fourth annual meeting of the National Board of Steam Navigation was held in the Fifth Avenue Hotel Sept. 11. The lakes were not well represented, but the western rivers were.

President J. A. Henderson, of Pittsburg, in his annual address referred to the lack of government aid in damming and locking the Ohio River. The appropriations made by Congress for this purpose was insufficient and it meant the tying up of the boats for two months of the year. On this account there is now 30,000,000 bushels of coal awaiting water transportation at Pittsburg.

President Henderson continued: "Here is another picture. Within the past three years 11,000 vessels have passed through the Suez canal, and but six of those carried the American flag at their mastheads. The fault is here. American industry is about 100 years ahead of the laws of the country, and it is one of the cardinal principles of this board to protect citizens from unwise and unjust legislation, and laws should be passed that will build up our American merchant marine."

The libel law was discussed at length, and it was unanimously pronounced the most iniquitous law for inland waters ever passed by sane men.

Another matter brought up was an instance where a collision was caused to a passenger steamer on account of some unauthorized person interfering with the bell pull. After this person had been arrested it was found that there was no statute under which he could be punished. A resolution was therefore adopted asking that the matter be taken up by the Board of Supervising Inspectors, with a view to securing proper legislation.

Officers were elected for the ensuing year as follows: President, J. A. Henderson, Pittsburg; first vice-president, B. D. Wood, New Orleans; second vice-president, F. F. Gregory, New York; treasurer, W. J. Wood, Pittsburg; secretary, Charles H. Boyer, New York; assistant secretary, H. B. Jenkins, St. Louis. Executive committee—Geo. L. Norton, chairman, New York; J. B. Coyle, Portland, Me.; H. A. Bourne, F. G. Osborn, G. L. Douglass, M. Moran and R. C. Veit, New York; M. E. Staples and C. W. Woolsey, Jersey City; P. H. Marshall, New York; D. M. Munger, Brooklyn; G. B. Martin, New Haven; W. W. O'Neil, Pittsburg; H. C. Haarstick and G. C. Meissonier, St. Louis; F. A. Laidley and F. A. Rothair, Cincinnati; W. W. Hite, Louisville, Ky.; E. W. Dickey and Robt. Wilmot, New Orleans.

The board adjourned to meet in St. Louis on the second Tuesday of October, 1896.

## COMPRESSED AIR FOR FOG HORNS.

The Light-House Board has been experimenting for the last year with a new fog-horn apparatus at the Staten Island station, says the New York Maritime Register. Instead of the old method of blowing their horns with steam, which as slow and expensive, the officials of the Light-House Board decided to use a gas motor, with which air is compressed into a tank and liberated through the fog-horn. The motor is called the Horns-Akroyd safety oil engine, after its inventors. Experiments thus far have been made with stationary engines on shore. To assure themselves of the efficiency of the motor on shipboard, the officials of the Light-House Board have decided to have one of the motors and its appliances placed on the Winter Quarter Shoal lightships, off Atlantic City. Two engines have been put on the ship. One is a duplicate of the other, to replace the one in operation in case of accident. It is believed that the engine will be as successful on a rolling as on a stationary base. The engine is moved by a succession of gas explosions in the piston. By the use of a Clayton air compressor, air will be forced into the large tank, to be drawn upon as occasion requires. The blast with the new generator and apparatus will last five seconds, and will be repeated each minute during a fog. The greatest advantage, perhaps, which the new generating power possesses is the quickness with which the sound can be made. Under the old method it took from 45 to 60 minutes to light the fires under the boilers for the generation of the steam to blow the horns. Now, in 5 minutes air can be compressed in the tank, and a blast of the maxmium force can be given immediately. The tank is left full of compressed air after it is used, and contains enough power to keep the horn going for 10 minutes. Thus it will be seen that under the new method the blowing of the horns is practically continuous. They can be started before the fog rolls down upon the keeper, and kept blowing steadily until the fog lifts.

The power can readily be shut off during any temporary lifting of the fog, while formerly it was necessary to keep the fire up and banked for a long time so as to be sure of being in readiness should the fog roll down again. If the experiment on the light-ship on Winter Quarter Shoal proves a success, the next appliance will be put in on the light-ship off Nantucket, where the fogs are frequent.

## HARPER'S FOR OCTOBER.

The October number of Harper's Magazine opens with a handsomely illustrated paper by Edwin Lord Weeks on the troublous phase of life in modern India, indicated by its title, "Hindoo and Moslem." "At the Sign of the Balsam Bough," by Rev. Dr. Henry Van Dyke, recounts the delights of camping along the banks of salmon streams in the pine woods of Canada. Illustrations by Chas. Broughton add to its attractions. The life of Great Britain's royal family at Balmoral is described in "Queen Victoria's Highland Home," illustrated by Joseph Pennell. The second and last instalment of Richard Harding Davis' "Three Gringos in Central America" describes some of the discomforts of life and travel in Honduras. Illustrations of characteristic places and persons accompanying the text. A timely and interesting paper on "The Future in Relation to American Naval Power" is contributed by Captain A. T. Mahan, U. S. N., who advocates a strong navy as a promoter of peace and of American interests, and assails the dogma that the national defence should be the sole purpose of battle-ships. In "The Gift of Story-telling" Brander Matthews analyzes the success of some popular authors and their work. A romatic episode, of which he was a witness, is related by Monsignor Bernard O'Reilly. The paper is called "Ronzano," after the historic Italian villa where the scene in laid. In "Jamie the Kid" Josiah Flint describes an incident of his life as a tramp. This true story is illustrated by Mr. A. B. Frost. Poultney Bigelow's fourth paper "The German Struggle for Liberty" describes the futile rebellions of Schill and Hofer, and the first national Prussian parliament. Illustrations by R. Caton Woodville accompany the text. Thomas Hardy's novel, "Hearts Insurgent," is continued, and the first battle in the siege of Orleans figures in the "Personal Recollections of Joan of Arc." The fiction also includes "The Coupons of Fortune," an amusing sketch of New York life, by Mrs. Mary Stewart Cutting, and "Alone in China," the first of a series of Chinese tales by Julian Ralph, with illustrations by C. D. Weldon. The "Editor's Study" of current events, and the "Editor's Drawer" of humorous anecdotes, pictures, and verse complete a varied and attractive number.

## TRADE NOTES.

The American Ship Windlass Co., of Providence, R. I., manufactures, it is claimed, the smallest capstan in the country, and probably the largest also. Its smallest capstans for yachts and sailboats weigh only sixty-five pounds. These are made of iron or bronze and work with cranks. The iron capstan are galvanized, but have only one speed. The bronze capstans have two speeds, so that they give increased power by simply reversing the motion of the cranks, without any other change. Its largest capstans weigh about 4,000 pounds and are for naval vessels or for use on wharves for hauling heavy vessels up to the dock at great speed, and they work either by hand or steam as required. Between these two ranges there is an immense variety. The company claims to make the best capstans that are made anywhere in the world, and their good qualities are testified to in the opinions of experts in Great Britain as well as all over the world. The great beauty, however, of its product, the company states, is the fact that it can manufacture as cheaply as the cheapest and better than the best.—Manufacturers' Record.

A handsome excursion steam yacht has just been completed for Wm, Zink & Co., of St. Louis, by the Marine Iron Works, of Chicago, in which they have placed one of their 1895 patterns of 8x8 balanced piston valve high speed engines. Boiler allowed 165 pounds working steam pressure. The yacht is 50 feet long on deck, 10½ feet beam, draws 3 feet of water, has flush deck and is licensed to carry 75 passengers. Delivery will be made under her own steam via Illinois and Michigan Canal and the Illinois and Mississsippi rivers.

## LAKE TONNAGE STATISTICS.

Commissioner of Navigation Eugene T. Chamberlain has just completed and forwarded to THE MARINE RECORD a series of valuable tables of statistics relating to hull construction during the year ending June 30, 1895. The lakes continue to show up by far the larger average size of craft. During the twelve months mentioned there were constructed on the Great Lakes 7 steel steam vessels, with a total gross tonnage of 16,926, or an average of 2,418 tons gross for each ship. On the Atlantic and Gulf Coasts the number constructed was 21, or three times as many as on the lakes, while the total tonnage was only 19,606, or about 933⅓ average tonnage. In wooden tonnage the same thing holds true, the lakes having constructed 51 steam vessels with a total tonnage of 9,590, or an average of 188, while on the Atlantic and Gulf Coast 87 wooden steam craft were built, with a total tonnage of 8,910, or an average of less than 102½.

In the ownership of all kinds of vessels, the Huron district (Port Huron) is in the lead as to the number of craft owned—448. Buffalo Creek follows next in order with 376; then comes Milwaukee with 350; Champlain with 347; Chicago with 299; Detroit with 288; Michigan (Grand Haven) with 282; and Cuyahoga with 258, no other district registering as high as 200 boats. In the matter of tonnage, however, the order is somewhat transposed. Cleveland shows an average tonnage of 921.55; Huron district's average is only 397.20; Buffalo Creek, 448.56; Milwaukee, 251,23; Champlain, 101.41; Chicago, 201.36; Detroit, 567.85; and Michigan (Grand Haven) 120.51.

Construction on the Pacific Coast was very slack during the fiscal year, only one vessel of over 1,000 tons measurement having been built. This was undoubtedly the large whaleback steamer City of Everett, which was built on Puget Sound by capital from the Great Lakes district. This steamship registered 2,504 tons gross—a very respectable size. The other construction on the Pacific Coast was limited to 18 steam vessels of wood, with an average gross tonnage of 141, and 55 sailing and unrigged vessels, the average tonnage of which is only 38 1-5.

The new floating property constructed on Western rivers during the year was insignificant, being confined to a few small steel tow boats, and 57 wooden steamboats, with an average tonnage of 124½, which, of course, means more on a river than on a deep water boat. There were also constructed 14 river barges, with an average tonnage of 63.

Commissioner Chamberlain deserves great credit for compiling these statistics at so early a date after the close of the fiscal year, from reports which are always slow to come in, and which must first be put to other uses before taking a part in the compilation of statistics. Mr. Chamberlain states to THE RECORD that he has still to get data from some quarters of the seaboard, and that some time will elapse before he can secure complete figures for the entire country.

VESSELS OF ALL KINDS BUILT IN VARIOUS LAKE CUSTOMS DISTRICTS DURING THE YEAR ENDING JUNE 30, 1895.

| CUSTOMS DISTRICT. | STEAM. No. | STEAM. Gross Tonnage. | SAIL. No. | SAIL. Gross Tonnage. | UNRIGGED. No. | UNRIGGED. Gross Tonnage. |
|---|---|---|---|---|---|---|
| Cuyahoga [Cleveland] | 4 | 12,448 | .... | ..... | .... | ..... |
| Huron [Port Huron] | 11 | 8.741 | 6 | 2,658 | .... | ..... |
| Detroit | 4 | 1,847 | 1 | 90 | .... | ..... |
| Milwaukee | 1 | 14 | 1 | 7 | 1 | 387 |
| Buffalo Creek [Bufflao] | 8 | 304 | .... | ..... | .... | ..... |
| Duluth | 1 | 16 | .... | ..... | .... | ..... |
| Champlain [Plattsburg] | .... | ..... | .... | ..... | 6 | 657 |
| Miami [Toledo] | 2 | 118 | .... | ..... | .... | ..... |
| Niagara [Suspension Bridge] | 4 | 279 | .... | ..... | 3 | 377 |
| Superior [Marquette] | 4 | 1,775 | 4 | 827 | .... | ..... |
| Sandusky | 1 | 9 | .... | ..... | .... | ..... |
| Michigan [Grand Haven] | 7 | 343 | 5 | 69 | .... | ..... |
| Chicago | 5 | 238 | 5 | 4,515 | .... | ..... |
| Genesee [Rochester] | .... | ..... | .... | ..... | .... | ..... |
| Oswegatchie [Ogdensburg] | .... | ..... | .... | ..... | .... | ..... |
| Oswego | 3 | 330 | .... | ..... | 3 | 250 |
| Erie | 2 | 25 | .... | ..... | .... | ..... |
| Cape Vincent | 1 | 29 | .... | .... .... | .... | ..... |
| Total | 58 | 26,516 | 22 | 8,166 | 13 | 1,671 |

TABLE SHOWING THE NUMBER AND TONNAGE OF VESSELS OWNED IN THE SEVERAL CUSTOMS DISTRICTS ON THE LAKES.

| PORT. | CUSTOMS DISTRICT. | Number. | Gross Tons. |
|---|---|---|---|
| Cleveland | Cuyahoga | 257 | 236,843.50 |
| Buffalo | Buffalo Creek | 376 | 183,697.49 |
| Port Huron | Huron | 448 | 178,946.07 |
| Detroit | Detroit | 288 | 163.542.08 |
| Milwaukee | Milwaukee | 350 | 87,927.24 |
| Chicago | Chicago | 299 | 80,206.70 |
| Plattsburg | Champlain | 347 | 35,191.41 |
| Marquette | Superior | 168 | 74,650.15 |
| Sandusky | Sandusky | 96 | 46,644.59 |
| Grand Haven | Michigan | 282 | 33,984.57 |
| Erie | Erie | 59 | 36,538.40 |
| Ogdensburg | Oswegatchie | 49 | 23,545.59 |
| Oswego | Oswego | 44 | 8,404.13 |
| Toledo | Miami | 82 | 22,412.52 |
| Suspension Bridge | Niagara | 23 | 8,983.24 |
| Burlington | Vermont | 35 | 5,303.67 |
| Rochester | Genesee | 22 | 5,408.68 |
| Cape Vincent | Cape Vincent | 56 | 3,675.78 |
| Duluth | Duluth | 58 | 5,485.04 |
| Dunkirk | Dunkirk | 3 | 68.29 |
| Total | | 3,342 | 1,241,459.14 |

VESSELS OF 1,000 TONS AND OVER BUILT IN THE UNITED STATES DURING THE YEAR ENDING JUNE 30, 1895.

| DISTRICTS. | STEEL. STEAM. No. | STEEL. STEAM. Gross Tons. | STEEL. SAIL AND UNRIGGED. No. | STEEL. SAIL AND UNRIGGED. Gross Tons. | WOOD. STEAM. No. | WOOD. STEAM. Gross Tons | WOOD. SAIL AND UNRIGGED. No. | WOOD. SAIL AND UNRIGGED. Gross Tons. |
|---|---|---|---|---|---|---|---|---|
| Northern Lakes | 6 | 17,561 | 2 | 4.474 | 2 | 2,405 | 1 | 1.730 |
| Atlantic and Gulf Coasts | 3 | 14,650 | .... | ..... | 1 | 2,211 | 6 | 8.143 |
| Pacific Coast | 1 | 2,504 | .... | ..... | .... | ..... | .... | ..... |
| Western Rivers | .... | ..... | .... | ..... | ... | ..... | .... | ..... |
| Total | 10 | 34,715 | 2 | 4 474 | 3 | 4 616 | 7 | 9,873 |

NOTE.—No iron tonnage constructed.

VESSELS OF ALL KINDS BUILT IN THE UNITED STATES DURING THE YEAR ENDING JUNE 30, 1895.

| DISTRICTS. | STEEL. STEAM. No. | STEEL. STEAM. Gr. Tons. | STEEL. SAIL AND UNRIGGED. No. | STEEL. SAIL AND UNRIGGED. Gr. Tons. | IRON. STEAM. No. | IRON. STEAM. Gr. Tons. | IRON. SAIL AND UNRIGGED. No. | IRON. SAIL AND UNRIGGED. Gr. Tons | WOOD. STEAM. No. | WOOD. STEAM. Gr. Tons. | WOOD. SAIL AND UNRIGGED. No. | WOOD. SAIL AND UNRIGGED. Gr. Tons. | TOTAL. STEAM. No. | TOTAL. STEAM. Gr. Tons. | TOTAL. SAIL AND UNRIGGED. No. | TOTAL. SAIL AND UNRIGGED. Gr. Tons. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Northern Lakes | 7 | 16,926 | 3 | 5,269 | .... | ..... | ... | ..... | 51 | 9,590 | 32 | 4.568 | 58 | 26,516 | 35 | 9,837 |
| Atlantic and Gulf Coasts | 21 | 19,606 | 5 | 706 | 3 | 2,439 | .... | ..... | 87 | 8,910 | 337 | 28,323 | 111 | 30,955 | 342 | 29,029 |
| Pacific Coast | 1 | 2,504 | .... | ..... | .... | ..... | .... | ..... | 18 | 2 539 | 55 | 2.101 | 19 | 5 043 | 55 | 2,101 |
| Western Rivers | 3 | 144 | .... | ..... | .... | ..... | .... | ..... | 57 | 7.096 | 14 | 882 | 60 | 7,240 | 14 | 882 |
| Total | 32 | 39.180 | 8 | 5 975 | 3 | 2 439 | .... | ..... | 213 | 28,135 | 438 | 35 874 | 248 | 69,754 | 446 | 41 849 |

VESSELS OF ALL KINDS OWNED (REGISTERED, ENROLLED AND LICENSED) IN VARIOUS LAKE CUSTOMS DISTRICTS ON JUNE 30, 1895.

| CUSTOMS DISTRICT. | STEAM. Number. | STEAM. Gross Tonnage. | SAIL. Number. | SAIL. Gross Tonnage. | UNRIGGED. Number. | UNRIGGED. Gross Tonnage. |
|---|---|---|---|---|---|---|
| Cuyahoga [Cleveland] | 174 | 182,473 | 75 | 50,408 | 8 | 3.963 |
| Huron [Port Huron] | 197 | 94 930 | 251 | 84,016 | ..... | ..... |
| Detroit | 162 | 123,513 | 114 | 38.429 | 12 | 1,600 |
| Milwaukee | 151 | 62,204 | 199 | 25,723 | ..... | ..... |
| Buffalo Creek [Buffalo] | 249 | 132,541 | 30 | 14,520 | 97 | 36,636 |
| Duluth | 50 | 3,343 | 6 | 1 645 | 2 | 497 |
| Champlain [Plattsburg] | 8 | 786 | 22 | 1 323 | 317 | 33,082 |
| Miami [Toledo] | 58 | 14 685 | 24 | 7,728 | ..... | ..... |
| Niagara [Suspension Bridge] | 13 | 4,845 | 8 | 3,222 | 2 | 916 |
| Superior [Marquette] | 123 | 62 809 | 45 | 11,841 | ..... | ..... |
| Sandusky | 71 | 35 869 | 21 | 10,473 | 4 | 303 |
| Michigan [Grand Haven] | 167 | 24,356 | 115 | 9,628 | ..... | ..... |
| Chicago | 175 | 48,266 | 123 | 31.321 | 1 | 620 |
| Genesee [Rochester] | 17 | 3.903 | 4 | 1,378 | 1 | 128 |
| Oswegatchie [Ogdensburg] | 27 | 18,021 | 11 | 3,690 | 11 | 1,835 |
| Oswego | 18 | 4 143 | 11 | 2 385 | 15 | 1,876 |
| Erie | 55 | 36,129 | 4 | 410 | .... .... | ..... .... |
| Cape Vincent | 27 | 1,921 | 25 | 1,479 | 4 | 275 |
| Vermont [Burlington] | 10 | 2.930 | 12 | 1,023 | 13 | 1 351 |
| Dunkirk | 3 | 68 | ..... | ..... | ..... | ..... |
| Total | 1,755 | 857,735 | 1,100 | 300,642 | 487 | 83,082 |

# THE MARINE RECORD

ESTABLISHED 1878.

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**CLEVELAND, O., SEPTEMBER 26, 1895.**


THE Deep Waterways Convention has been well attended, and the very valuable papers have been widely and wisely discussed, both within and without the convention hall. The association is very properly disposed to work by steps, and as Mr. E. V. Smalley, of St. Paul, said Tuesday evening, the association will have accomplished a great deal when it succeeds in deepening the waterway between Lakes Erie and Ontario, and facilitating the passage between the two.

Prompt attention should be given to the request made by the National Board of Steam Navigation asking that legislation be enacted providing penalties for unauthorized persons interfering with the signal apparatus of a boat. The bell ropes on most of the lake steamers are exposed for 100 feet or more and mischievously disposed persons might do a great deal of harm. While the mechanical telegraph system connecting the captain and engineer is rapidly coming into general use on the larger steamers, yet even this is left alone often for a considerable time, when master or mate feels inclined to go down in front of the pilot house rather than remain on top. While the average individual is afraid to "fool" with things, yet such a law as is proposed could do no harm and might be the means of preventing disaster.

IT is rather an anomalous state of affairs when a great nation like the United States is compelled to dock its best and largest battleships in foreign docks. In time of war the British provinces would of course consider it a violation of the laws of neutrality to permit dry-docking of battleships, even when it might be more necessary than at present. While the construction of the Port Royal dock is a national disgrace, there is surely some means of transforming it into a dock of sufficient strength for the purposes required. By the way, it might not be a bad plan for the government to send representatives to the lakes to learn how to build dry-docks. In the 100 foot extension of the Ship Owners' dry-dock, Cleveland, that company has put in 150,000 feet of square timber alone to give strength to the dock, every foot of this being buried out of sight by earth or heavy planking.

SEABOARD marine papers, as well as the daily press, are unanimous in their expressions of opinion as to the end of the yacht race, both in criticizing Lord Dunraven's "baby act," and in divining the reason for it, which was that he had become convinced of the inferior sailing properties of his boat, as compared with the Defender. When a conservative man like Rear Admiral Belknap, U. S. N., who was an eye-witness of the races, comes out and makes unqualified statements, the case passes the possibility of national prejudice. Admiral Belknap ex-expressed serious doubts as to the fouling of the Defender being entirely an accident, and says it was certainly due to uncalled for jockeying on the part of the Valkyrie's crew. There is no sport which is naturally so clean and fair—as a rule—as yachting, and if that is the sort of tactics the English introduce on this side, the sooner they go home and the longer they stay there the better. America holds the championship, and will keep it, whether they come again or remain away.

### THE MERITS OF BOILERS.

In the contest between the steam generating apparatus of the twin steamers Victory and Zenith City, it must be rather disappointing to advocates of the tubulous boiler that the Zenith City should load only 138,000 bushels of wheat, or 4,140 tons, on practically the same draft to which the Victory, with a Scotch type boiler and its additional weight of water, loaded 4,132 tons. Everybody knows that the Scotch type boiler carries such an amount of water that a steamer is able to reduce her draft materially, and sometimes release herself, by "blowing off her boiler." This slight difference in carrying capacity is, therefore, naturally a matter of some surprises. Interested observers will now expect a great showing for the water tube boiler in the way of economical fuel consumption and high speed records. THE MARINE RECORD is by no means opposed to innovations which will tend to improve the lake service, and hopes that the very small difference in cargo can be explained satisfactorily for the tubulous boiler. At the same time, an unsatisfactory test with this boiler is not necessarily a conclusive argument against the water tube boiler, as another type, or possibly another individual boiler of the same type, might make a better showing.

### THE "CENTRAL" AND THE ERIE CANAL.

Buffalo papers announce that the New York Central Railroad is behind the syndicate of canal-boat men who are bent on raising rates. There should be nothing very alarming about this. Everybody will grant that the canal rates this year and last have been far too low. If the rates are advanced to a highly profitable basis the boats which are outside the combine will find a way to reap some of the benefits, "freight committee" or no "freight committee." This all-powerful "freight committee" will find it impossible to control the freight which will be carried by the Cleveland lake-canal fleet, and there will be a good deal of other freight that will get away from it, so that the boats outside the combine will gain a livelihood as well as those within. High rates will be an incentive to the building of new boats, and the matter of freight charges will regulate itself, just as it does in other water transportation. The object of the whole scheme on the part of the New York Central is, however, probably to hold out this red rag to the people at the polls of the Empire State this fall, and thus secure an adverse vote on the $9,000,000 improvement proposition. The New York voters should not allow themselves to be hoodwinked, however, and should vote for canal improvement even if it should throw a few dollars into the coffers of the railroad. The great object of supporting and improving the people's transportation route will be reached, and no railroad or other corporation can successfully monopolized the benefits of a state canal, so long as the state has a legislature that is disposed to do the right thing. New York's assembly has already shown its interest in the canals of the state, and may be depended upon to give them adequate protection.

### THE DEEP WATERWAYS CONVENTION.

The sessions of the International Deep Waterways Convention, held in Cleveland, Tuesday, Wednesday and Thursday of this week were well attended, and much interest has been manifested. Great numbers of charts and photographs hung upon the walls of Army and Navy Hall, where the sessions were held, and which was beautifully decorated for the occasion with American and British flags. Mr. Chauncey Dutton had on exhibition in the ante-room a large working model of his pneumatic canal lock, which raises ships several hundred feet at one lift, and this attracted much attention on the part of the delegates.

President O. A. Howland's address was masterly, and handled the joint waterways question from a broad-minded standpoint. He suggested as a first step, that all possibility of war be made eliminated by the establishment of an international supreme court, to consist of three members from each of the supreme judicial bodies of the two countries, to decide all international disputes on a legal basis.

Nearly all the numerous and valuable papers announced in the programme were presented, but as these have already been distributed in pamphlet form and printed in substance in the daily press, and as they will form a part of the book of proceedings of the convention, which will be given wide circulation, they need not be touched upon in these columns. Especial attention should be called, however, to a speech made Wednesday, by Capt. Alexander McDougall. It must be remembered that some of his whalebacks have made transatlantic trips, and that the schooner Joseph L. Colby and two barges are now on salt water. Capt. McDougall said: "Listening to Mr. Oldham's paper—on the adaptability of lake tonnage for ocean trade—reminds me of my own experience. I believe the great object of deep canals would be to get out ships which we will build here for foreign countries. The plan to deepen canals with the idea that bulk will not be broken until the merchandise reaches foreign countries, I do not believe will work. Ocean transportation and lake service will not mix any more than oil and water. If the scheme is practicable it would have been done before. When we talk of great canals, we should not construe it as meaning them to be passageways for the carrying of merchandise from the Great Lakes to foreign countries. There are many things to consider in making ships for both lake and ocean traffic. In the first place it would cost $50,000 more to put a lake ship in condition for ocean travel. A ship has to be made more stanch, have different machinery and above all has to be treated with paint both inside and out to prevent corrosion of salt water. More than this, a crew adapted for long cruises has to be shipped. And the extra cost of all these additions would be more than the cost of transferring the merchandise."

### OBITUARY.

JOHN C. PARKER.

Mr. John C. Parker, for many years superintendent of the "upper yard" of the Detroit Dry-Dock Co., died Wednesday of last week of Bright's disease of the kidneys, with which he had been confined to his bed for several weeks.

Mr. Parker was born in Ireland, in November, 1840, and at the age of five years emigrated to America with his parents. He learned the ship carpenter's trade in Canada and in New York, completing his apprenticeship while still in his teens. In 1859 and '60 he worked for the late John Oades in his shipyard at Clayton, N. Y., but when the war broke out Mr. Parker returned to New York and worked for W. H. Webb & Co., and others. After the war he removed to Black River, O., now Lorain, where he built the schooner Clough. He went to Cleveland and worked at the Quayle shipyard through 1866-7. In the latter year he went to Detroit, and began work as a contractor for Campbell, Owen & Co., the predecessors of the Detroit Dry-Dock Co. He built here the tug Champion, the steamer Gordon Campbell (the first double decker built on the lakes), the Inter-Ocean, Argonaut, S. C. Baldwin and schooner Michigan.

In 1875 Mr. Parker went to Oregon, where he built the U.S revenue cutter Corwin. He returned to Detroit the following year, and was soon afterward appointed superintendent of the Detroit Dry-Dock Co.'s shipyard and dry-docks in Detroit. In this position he had charge of the wooden steamers J. Emory Owen, Chicora, Garland (ferry) C. A. Eddy, Iron King, Argo, and car ferries St. Ignace and Ste. Marie. He stood high in the estimation of the company, and all the members express a feeling of personal bereavement in his death.

Mr. Parker has, for many years past, commanded a large salary, and had accumulated a small fortune. He leaves two sons, aged about 20 and 22 years. He was a member of Ashlar Lodge, R. A. M., Peninsular Chapter, and of Detroit Commandery, K. T. He had many friends who admired him for his honest disposition, although this sometimes showed itself bluntly. His remains were laid to rest Friday, in Elmwood cemetery.

Secretary Herbert is expected to shortly make an important change in the present system of employing labor at navy yards. He has been endeavoring for some time past to decide upon a plan for retaining the most efficient men at the yards while work is at hand, and of taking them on again should work in the meantime become slack and they are discharged, ahead of those above them on the register. The present method of employing men according to their number on the register results often in the yards getting inferior men until the work is more brisk, when the bottom of the register is reached and more efficient men are obtained.

# SHIP BUILDING AND REPAIRS.

## NEW SHIPS AND TALK OF OTHERS.

Business in shipbuilding circles continues brisk, and several contracts are in the air. The principal item in the way of new construction is the announcement by the Union Dry-dock Co., that they will build on their own account, a large steel steamer adapted to the package freight business. She will be about 320 feet long between perpendiculars, and about 335 feet over all, by 44 feet beam, and 26 feet depth of hold. She will be built on the channel system of construction, with a water bottom 54 inches deep. Both spar deck and main deck will be of steel, and she will be fitted with large hatchways and gangways for handling freight of all kinds. Hoisting engines and shaft run the whole length of the boat. Supt. Gaskin in giving the details to THE RECORD, says: "We expect to make her a modern freight boat, an up-to-date boat in every respect." The engine will be of the triple expansion type, with cylinders, 23, 39, and 64 inches diameter, by 42 or 48 inches stroke. Her boilers will be two in number, 16 feet in diameter by 12 feet in length, and tested for 175 pounds working pressure.

The American Steel Barge Co. has placed keel blocks for two steel barges to be built during the coming winter, but has so far declined to state for whom they are to be built. The barges will not be of the whaleback type, but will be schooner rigged, and will, according to present plans, have steel spars. They are to be 337 feet over all, 336 feet on the keel by 42 feet beam, and 26 feet depth, with 11 hatches. The cargo capacity is expected to be 3,600 net tons on 14 feet draft. The parties ordering one are said to be Reardon, Macdonald and others, owners of the City of London.

The Langell & Sons Co., of St. Clair, are arranging their shipyard at that place for the purpose of beginning the construction of a 2,000-ton vessel, which they will have ready for service next year. This shipyard in the past has been the mainstay of the working people of St. Clair, but has been idle for a long time, and its resumption will be a boom to the town.

It has been reported that Capt. James Davidson would build six wooden boats at his shipyard in West Bay City. This number is undoubtedly exaggerated, and Capt. Davidson has not, it is understood, fully made up his mind what he will do, as the Lake Michigan Car Transportation Co., have decided to have him build two more barges during the coming winter. Capt. Davidson will have the rebuilt steamer Phoenix ready to go into commission in a few days.

It is reported that Noble Bros , of Parry Sound, Ont., owners of the steamer John J. Long, which has been engaged in the passenger traffic between Detroit and Parry Sound, Ont., this season, would build a larger boat for the winter. Mr. Charles Noble, when approached on the subject the other day, said that he and his brothers were figuring on a new steamer, but had reached nothing definite yet.

It is reported that the Detroit dry-dock expects soon to close a deal for the construction of a steel steamer for a Detroit syndicate of which Capt. E. M. Peck is accused of being a member. The dimensions quoted are 420 feet over all, 400 feet keel, 45 feet beam, and about 28 feet depth.

Advices come from Toledo to the effect that the owners of the side-wheel steamer Dove contemplate the construction of a new hull, into which the Dove's machinery will be placed. Plans, is is stated, have already been drawn for the new hull. The Dove was built in 1863, but if memory serves right, has machinery of a more recent date. Work at John Craig's shipyard, Toledo, is making good progress, and the Shenango No. 2, the second of the Conneaut-Port Dover car ferries, will be launched about Oct, 15, and will soon afterward be delivered to her owners.

The work at the local shipyards is making ordinary progress. The plate for the revenue cutter John G. Carlisle is beginning to arrive at the Globe yard. The Otis Steel Co. was awarded the contract for the plate, and Penroyd, of Philadelphia, will furnish the angles.

The Duluth Tribune says : "Before Col. Greatsinger returns from Cleveland, where he has gone to attend the deep waterways convention, it is said he will leave with the Cleveland Ship Building Co. an order for one of the best harbor tugs that can be made, for use by the Minnesota Iron Co. at Two Harbors." At the time of going to press nothing conclusive had been reached in the matter. Neither can it be learned that anything has been done by F. W. Gilchrist, of Alpena, who the daily newspapers reported, was about to order a large tug at the Globe yard.

The Montague Iron Works Co., of Montague, Mich., have closed a contract with the Graham & Morton Transportation Co., of Benton Harbor, Mich., for a fore-and-aft compound marine engine, 20 and 40 inches by 30 inches stroke, which will be placed in this company's steamer City of Louisville. The Montague Iron Works Co. will also rebuild the old machinery of the City of Louisville, which will then be placed in the new tug which E. W. Heath, of Benton Harbor, is building for the Graham & Morton Co.

The McKinnon Manufacturing Co., of Bay City, will make four of the big steel plate pontoons which will be used in raising the Cayuga. They have closed the contract with Capt James Reid, and work will commence at once. The length of the pontoons will be 30 feet and their diameter 12 feet.

## GENERAL REPAIR WORK.

The steamer New Orleans has been in the Cleveland dry-dock all week for extensive repairs, including considerable new bottom planking, a piece of new forefoot, and thorough bottom calking. Her shoe was taken off and straightened, and now it is found that she must have a new stern pipe put in. She will not leave the dock until Friday. Her repair bill is something over $1,500. The damage was received by dragging on the bottom at Sailors' Encampment.

The Ship Owners' Dry-Dock Co. finished the repairs on the steamer C. B Lockwood, and gave the butts of the schooner Richard Winslow a thorough recalking. This company is engaged on a rebuild of the tug Tom Maytham, which has been hauled out near their dock. The Maytham will be given practically a new hull, nothing of the old being left but the keel, garboards and sternpost. The hull will be widened 18 inches and deepened accordingly. The machinery and boilers are being overhauled and rebuilt by the Globe Iron Works Co. The Globe is putting new cylinders into the steamer H. B. Tuttle.

Teare & Thomas are lengthening the stack of the steamer J. C. Gilchrist at the Globe yard.

The steamer Riverside damaged her cabin $100 worth by running into a boom of the schooner Bacon, which was lying at the ore docks in Lorain. She is being repaired.

J. G. Laird & Son, of Ashtabula, have rebuilt the stern of the schooner D. K. Chut.

DETROIT.—The schooner George W. Johnson was in the upper dry-dock for slight repairs. The tug Dexter had her rudder repaired at Oades'. The tug Rob Roy is at the River Rouge repairing broken crank-pin and a burst cylinder head.

BUFFALO.—The steamer Superior, in trying to make a landing here, twisted her stern so badly that dry-docking was necessary. The Robert Mills' machinery became disabled while in port, and she has been making repairs. The steamer Clyde, which struck and sunk the schooner Arctic on Saginaw Bay, was found, on her arrival here, to have broken only two planks forward.

### REPAIR NOTES.

The tug Winslow is receiving repairs at Bay City.

The repairs to the schooner P. B. Locke, now at Toledo, will cost $1,800.

The steamer Myrtle Ross is in dry-dock at Milwaukee for general repairs.

A survey on the schooner Emma E. Tyson, at Sandusky, fixed her damage at only $167.

The schooner Thomas L. Parker and steamer Vega collided in the Sault recently. The schooner was damaged $1,200 worth. The Vega stands the repair bill.

The J. S. Fay, which struck on Starve Island Reef, Lake Erie, was placed in Dunford & Alverson's dock, Port Huron. She got a new forefoot and some new bottom planking.

CAPT. ED. HOWARD is now constructing at his yard, Jeffersonville, Ind., what is, with one exception, the largest barge ever built for use on the Western rivers. The vessel will be 250 feet long by 42 feet beam and 8 feet hold, and is to be used by the Illinois Central at New Orleans as a railroad transfer. Its capacity is a loaded train of 17 cars.

## A STORMY WEEK.

During the past week several vessels have been swept out of existence, but their combined cargo capacity would not exceed that of one of the great steel barges now building at some of the yards. Luckily there was no loss of life, althongh some of the crews had rough experience.

The schooner A. W. Comstock foundered off Whitefish Point, Lake Superior, Sunday night, going down in 400 feet of water. The Comstock was built at Marine City, during the past winter.

The schooner Queen City went to pieces on Hog Island Reef, Monday, her crew being rescued by the Beaver Island life-savers. She had been torn from her moorings by the gale. The Queen City was a good sized carrier, valued at $18,000 and insured for about $7,000. She was built in 1873, but has always been well kept up.

On Monday the schooner C. H. Johnson went ashore on Gross Cap, under St. Helena Island, straits of Mackinaw, and went to pieces. The Johnson was an old schooner, having been built in Marine City in 1870. She had a Lloyds valuation of $3,500 and was insured for $2,000. The crew were gallantly rescued by Ambrose corps and his two sons, fishermen.

The schooner E. R. Williams went down in Green Bay Sunday night with 570 tons of ore. The crew reached an island near by and were taken to Escanaba next day in a yacht. The Williams was built in 1873 at Toledo.

The little schooner Arctic, of Charlevoix, was run down and sunk last Wednesday night off Point aux Barques, Lake Huron, by the package freighter Clyde, which took off the schooner's crew and took them to Detroit.

The barge Reindeer, at Toledo, is not considered worth repairing and has been towed to shoal water, where she will be allowed to go to pieces. There are total losses to the lake trade.

The steamer C. W. Elphicke fared so badly in the storm on Lake Superior, that temporary repairs were made at Marquette, and extensive permanent repairs will be necessary.

The steamships Matoa and Cadillac, both up-bound, collided in Mud Lake at 4 o'clock last Thursday morning. A hole 10 feet long, extending from the water line to the hurricane deck, and four feet in width was torn in the starboard side of the Cadillac near the engine room. By prompt action on the part of Capt. Sims, of the Cadillac, water ballast was forced into the port compartments, which listed the boat over and prevented her sinking. The Matoa was uninjured. The Cadillac had coal aboard and was temporarily repaired by Hickler Bros., a steel plate being bolted over the hole, after which she proceeded on her way.

## VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD by George F. Stone, Secretary Chicago Board of Trade, September 21, 1895.

| CITIES WHERE STORED. | WHEAT. Bushels. | CORN. Bushels. | OATS. Bushels. | RYE. Bushels. | BARLEY. Bushels. |
|---|---|---|---|---|---|
| Albany | ..... | 25,000 | 85 000 | ..... | ..... |
| Baltimore | 540 000 | 161 000 | 84,000 | 60 000 | ..... |
| Boston | 79.000 | 171 000 | 32 000 | ..... | ..... |
| Buffalo | 2,079,000 | 294,000 | 100,000 | 109 000 | 222,000 |
| " afloat | ..... | ..... | ..... | ..... | ..... |
| Chicago | 14 515 000 | 1 481.000 | 410 000 | 134,000 | 86 000 |
| " afloat | ..... | ..... | ..... | ..... | ..... |
| Cincinnati | 43,000 | 31 000 | 5,000 | 34 000 | 2 000 |
| Detroit | 462 000 | 24,000 | 16 000 | 12.000 | ..... |
| " afloat | ..... | ..... | ..... | ..... | ..... |
| Duluth | 4.726.000 | ..... | 43 000 | 22 000 | 329,000 |
| " afloat | ..... | ..... | ..... | ..... | ..... |
| Indianapolis | 146 000 | 62 000 | 2 000 | ..... | ..... |
| Kansas City | 671 000 | 15 000 | 2,000 | 4 000 | ..... |
| Milwaukee | 444 000 | ..... | ..... | 35 000 | 17,000 |
| " afloat | ..... | ..... | ..... | ..... | ..... |
| Minneapolis | 6 375 000 | ..... | 110.000 | 45 000 | 56,000 |
| Montreal | 132 000 | 3 000 | 104 000 | 3 000 | 1 000 |
| New York | 4.038 000 | 241 000 | 630,000 | 17 000 | ..... |
| " afloat | 8 000 | 17 000 | 11 000 | ..... | ..... |
| Oswego | 57 000 | ..... | ..... | ..... | ..... |
| Peoria | 66.000 | 38,000 | 200 000 | 1 000 | ..... |
| Philadelphia | 323,000 | 102,000 | 120 000 | ..... | ..... |
| St. Louis | 1,352 000 | 359.000 | 143 000 | 11 000 | 1.000 |
| " afloat | ..... | 63 000 | ..... | ..... | ..... |
| Toledo | 948 000 | 138 000 | 38,000 | 108.000 | ..... |
| " afloat | ..... | ..... | ..... | ..... | ..... |
| Toronto | 9,000 | ..... | 4.009 | ..... | 1.000 |
| On Canal | 814 000 | 417 000 | 127 000 | ..... | 20,000 |
| On Lakes | 5,558 000 | 1.637 000 | 760 000 | 20,000 | 272 000 |
| On Mississippi | ..... | 132 000 | 19,000 | ..... | ..... |
| Grand Total | 39,385,000 | 5,411,000 | 3 045.000 | 615 000 | 1,007,000 |
| Corresponding date 1894 | 70 189,000 | 4 192 900 | 7 844 000 | 319.000 | 1.746.000 |

THE MARINE RECORD is the headquarters for marine publications of every description. No. 144 Superior St.

# AIDS TO NAVIGATION.

## NOTICE TO MARINERS.

SEPTEMBER HYDROGRAPHIC BULLETIN.

The September bulletin of the Hyrographic Office for the Great Lakes is even more of a practical aid to mariners than any of its predecessors. It contains, as an appendix a series of charts, giving the results of soundings taken in Death's Door Passage, over and above Middle and Nine Foot Shoals; also the depths of water about Gull Island, Gull Island Reef, and Richards Reef, near the Beavers; soundings for several miles in various directions from Waugoshance lighthouse, including Vienna Shoal, Rose Shoal, and out as far as the Gray's Reef lightship; also miniature charts of Spectacle Reef and Martin's Reef, in Lake Huron. The bulletin, besides again calling attention to some notices to mariners already issued, states that the following buoys have been placed in Lake Superior:

Point Abbaye Shoal north buoy, black, third-class can, in 20 feet of water; Point Abbaye W. S. W. (S. 67° 30′ W.) distant 1¼ miles; Huron Island lighthouse, E. 1½ S. (S. 84° 22′ E.) distant 5 1/16 miles.

Point Abbaye, southeast buoy; black, third-class can, in 20 feet of water. Point Abbaye W. ⅞ S. (S. 80° 9′ W.) distant 1⅜ miles; Huron Island light E. ¼ N. (N. 87° 11′ E.) distant 4¾ miles.

Big Bay Point, black 30-foot spar buoy; Big Bay Point S. ¼ E. (S. 2° 49′ E.) distant 2,000 yards; point of land west of Big Bay, W. by N. (N. 78° 45′ W.) distant 5,000 yards.

A 25 foot red spar buoy has been established in 15 feet of water to mark the Thirteen Foot Shoal, St. Mary's River, on the following bearings: Encampment crib, S. W. (S. 45° W.) distant 1,000 feet; tangent to Johnson Point, N. by W. ¾ W. (N. 19° 41′ N.)

The bulletin states that the soundings in the deep waters between the Manitous and the mainland, Lake Michigan, are not correctly marked. Deeper water is found between South Manitou Island and Sleeping Bear than is shown upon the lake charts.

A reef has been discovered in Lake Michigan, extending in a northeast and southwest direction, and with 16 feet least water over it. This reef is to be known as Boulder Reef. A buoy, 25-foot spar, red and black horizontally striped, has been placed at the northeastern extremity of this reef, in 19 feet of water on the following bearings: South Fox Island lighthouse, S. S. E. ¼ E. (S. 25° 23′ E.) distant 16¾ miles; Beaver Island lighthouse, E. ¼ S. (S. 86° 50′ E.) distant 20 miles; southeast point of Gull Island, N. E. (N. 45° E.) distant 10 miles.

In a recent survey by the U. S. S. Michigan, in the neighborhood of Waugoshance lighthouse the following rocks were located:

A rock, with 12 feet of water over it, E. N. E. ¾ E. (N. 76° 30′ E.) distant 2,500 feet from Waugoshance lighthouse; a rock with 13 feet water over it, E. N. E. ¾ E. (N. 76° 30′ E.) distant 2,900 feet from Waugoshance lighthouse; a rock, with 17 feet of water over it, N. W. (N. 45° W.) distant 1,700 feet from Waugoshance lighthouse. Fifteen feet of water was found on Rose Shoal. Vessels drawing more than 14 feet of water are recommended to pass to the northward of Waugoshance Sixteen Foot Shoal (Rose) buoy. Under no circumstances should vessels approach Waugoshance light closer than ¾ of a mile, without bearing to the westward of W. S. W. (S. 67° 30′ W.); nor should they bring the lighthouse to bear to the northward of N. N. E. (N. 22° 30′ E.) when standing to the southward, as the reefs are very foul with boulders.

An examination of Martin's Reef, Lake Huron, shows that the least depth of water on this reef is three feet. Vessels are cautioned to give this reef a wide berth, as it is a dangerous spot, and in the track of vessels plying between St. Mary's River and Lake Michigan.

A dangerous shoal is reported S. E. by S. (S. 33° 45′ E.) distant 5¼ miles from Point au Pelee lighthouse. This is a dangerous obstruction, and vessels should give Point au Pelee a wide berth, as the shoal has extended S. E. from the point.

It is very plain that vessels navigating at the eastern end of Lake Ontario cannot rely closely on their compass bearings. In the neighborhood of the Main Duck Islands, it has been frequently observed that there is a great deviation of the compass, sometimes as much as a point at a time. This renders navigating very uncertain in thick weather. This deviation is due, most probably, to numerous superficial deposits of iron ore. An examination of the magnetic observations that have been made in Ontario shows that there are numerous localities in the region immediately above Lake Ontario where there are considerable local irregularities. The dips at Kingston and Belleville, at the foot of Lake Ontario, and at Prescott, on the St. Lawrence River, are among the most irregular recorded on the Magnetic Survey of Canada, and it is certain that both the compass and the dipping needle will be subject to notable and irregular local influences in the eastern portion of the lake. At Brockville, about 12 miles west of Prescott, and at Cornwall, about 46 miles east of that place, the anomaly disappears.

A LIST OF CORRECTIONS.

The following effects the List of Buoys and Beacons, Northern Lakes and Rivers, 1895:

56. LAKE MICHIGAN.—Old Mackinac Point Light-station, Michigan, page 85.—The bearing of Bois Blanc Lighthouse should read N. 84° E. instead of N. 80° E.

Simmons Reef Light-vessel, No. 56, Michigan, page 86.—The bearing of White Shoal Light-vessel should read S. 36° E. instead of S. 60° E.

Petite Pointe au Sable Light-station, Michigan, page 90.—The distance of Grand Pointe au Sable Lighthouse should read 28⅛ miles instead of 28½ miles.

Grand Haven Light-station, Michigan, page 92.—The bearing of Holland Pier-head Lighthouse should read S. ½ E. instead of S. ¼ E.

South Haven Pierhead Light-station, Michigan, page 92.—The bearing of Chicago Harbor Lighthouse should read S. 62° 30′ W. instead of 62° 30′ W.

Michigan City Light-station, Indiana, page 93.—The bearing of Chicago Harbor Lighthouse should read N. 71° 15′ W. instead of N. 70° 15′ W.

Racine (Root River) Light-station, Wisconsin, page 96.—The bearing of Grand Haven Lighthouse should read N. 74° E. instead of N. 74° W. In the column of remarks for "about 210 yards inside of the outer end" read 330 yards.

Sheboygan Lighthouse, Wisconsin, page 98.—The bearing of Grande Pointe au Sable Lighthouse should read N. 71° E. instead of N. 70° E.

Kewaunee Pierhead Light-station, Wisconsin, page 99.—In the column of remarks, the characteristic of the fog signal should read "giving blasts of 3 seconds' duration" instead of 30 seconds.

Sturgeon Bay Canal Pierhead Light-station, Wisconsin, page 99.—In the column of remarks, the width between piers at entrance should read 235 feet instead of 275 feet.

Whiskey Island Shoal Buoy, page 102.—The bearing of the north end of Trout Island should read WSW. ⅜ W. instead of WSW. ⅞ W.

56. GREEN BAY, WISCONSIN.—Eagle Bluff, Light-station, Wisconsin, page 105.—The bearing of Boyer Bluff should read N. 39° 30′ E. instead of N. 29° 30′ E.

Tail Point Light-station, Wisconsin, page 107.—The bearing of Grassy Island, (upper Lighthouse) should read S. 9° W. (S. ¾ W.) instead of S. 10° 30′ W. (S. by W.)

LIGHTS ON HAY LAKE CHANNEL.

The new range lighting system on the Hay Lake channel is about completed, says the Sault St. Marie News. Work has so far progressed that September 30 has been fixed as the date for the introduction of the system, although some night next week a trial may be given the new lights. There are 27 on the channel. Commander W. W. Mead, of the Eleventh Light-House District, has had the personal supervision of the work. The location of the lights and colors are here given:

East end of dike, a red light; float No. 1, opposite light on end of dike, a white light; middle of dike, a fixed red light; float No. 2, opposite light on center of dike, a fixed white light; west end of dike, a red light; float No. 3, opposite light on west end of dike, a white light; west end of dike, Neebish Island range, two fixed white lens lantern lights on skeleton iron towers on Neebish Island, which marks axis of channel through lower Hay Lake; Middle Neebish channel range, two fixed white lens lantern lights on cribs, indicating axis of Middle Neebish channel; float No. 4, opposite crib light at turn in channel, a fixed red light shown from an upright on float moored on the northern edge of channel which marks turning point; float No. 5, white light; crib or float No. 6, a red light; float No. 7, Nine-Mile Point, a white light; float No. 8, Nine-Mile Point, a red light; Nine-Mile Point crib light, a fixed red light on crib, marks shoal off Nine-Mile Point and indicates turning point in standing up or down Hay Lake; Six-Mile Point range, two white lights, marking axis of channel through Little Rapids; Little Rapids range, two white lights on cribs, range guides to and from Nine-Mile Point; Frichette Point range, two white lights, guides through lower cut of Little Rapids; Island No. 1 light, white light on the lower end of the west bank; there will be two post lights on the northern end of Island No. 1, one red and the other white; another red light will be fixed on the east bank of the cut at the lower end of the cut; north entrance to channel, a white flashing light on crib.

Allan Rains has been appointed keeper of the six lights within the vicinity of the dike. At the ranges at the head of the Neebish regular keepers who have been in the service will be in charge. The keepers of these lights will also take care of the crib light and float lights in that vicinity; Frank Nolan will be keeper of the Nine-Mile Point crib and two floats; R. L. Mitchell will look after the Six-Mile Point ranges; Chas. Newcomb, at Frichette's Point; J. H. Povey, two crib lights near Six-Mile Point. Of the upper flash light and other lights on Island No. 1, some keeper already in the service will be in charge.

LIGHT AT EAST GAP, TORONTO

A temporary light established by the government of Canada on the east pier at the East Gap or eastern entrance to Toronto harbor, Lake Ontario, put in operation on the 9th instant. Lat. N. 43° 37′ 48″. Long. W. 79° 20′ 20″. The light is a fixed red light elevated 16 feet above the level of the lake. It should be visible 6 miles from all points of approach. The illuminating apparatus is dioptric of the 7th order.

The light is shown from a column surmounting a hexagonal iron shed. The building is 11 feet high and is the gray color of galvanized iron. It stands on the pier 100 feet from its outer end, but will be moved nearer the end of the pier and raised as soon as the construction work is finished. Another light to range with it will also be established later. The light is intended to guide vessels approaching Toronto to the entrance through the East Gap. Mariners will have to allow for the projection of the pier lakeward beyond the light.

SHOAL NEAR ALGOMA MILLS.

Captain J. E. Williscroft, master of the steamer Lillie Smith, reports having struck on the inner southwest patch or shoal near Simon Rock, in the south passage to Algoma Mills, North Channel, Ontairo. Lat. N. 46° 8′ 18″. Long. W. 82° 52′ 15″. This shoal is a quarter mile S. by W. ½ W. from Simon Rock, and Chart 908 shows 3 fathoms on it. Captain Williscroft found 8½ feet over a boulder bottom.

WM. SMITH,
Deputy Minister of Marine and Fisheries.
Ottawa, Canada, 7th September, 1895.

NOTES FOR NAVIGATORS.

The improvement of Cheboygan Harbor is completed, and at the present stage of water there is 16½ feet of water clear.

The contract for a light-house at Cabot Head, Georgian Bay, has been awarded to John George, of Port Elgin. Two fog horn machines and boilers have been set up. The new light-house at Double Top Rock, Georgian Bay, is completed.

There is a shoal which has heretofore been unknown to navigators in Parry Sound. It is about one hundred feet from Silvoy's Rock, and has only five or six feet of water on it. Fortunately it is so far out of the channel as to be of no particular harm except to vessels beating in or out of the sound.

---

AN ingenious style of steel wharf has just been built by a concern in Rockland, Me., to be erected on a ledge where no piles can be driven. In place of the piles heavy steel rods are to be used, the points to be imbedded in the ledge in holes drilled for the purpose. These rods are 2½ inches in diamter. Each rod is to support a steel cap 8 by 10 inches, into which the ends of a floor timber will be inserted. Over each cap is a steel clamp to hold the timber in place. Iron rods stretching away in various directions, will guy the timbers when in place to keep them from swaying. The wharf will be a handsome, substantial and durable affair. The company also has an order for a still larger wharf for the same parties.

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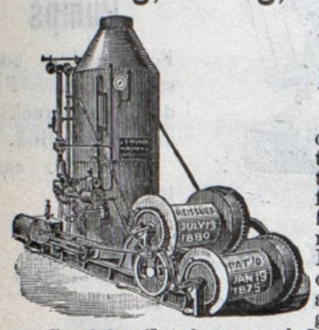

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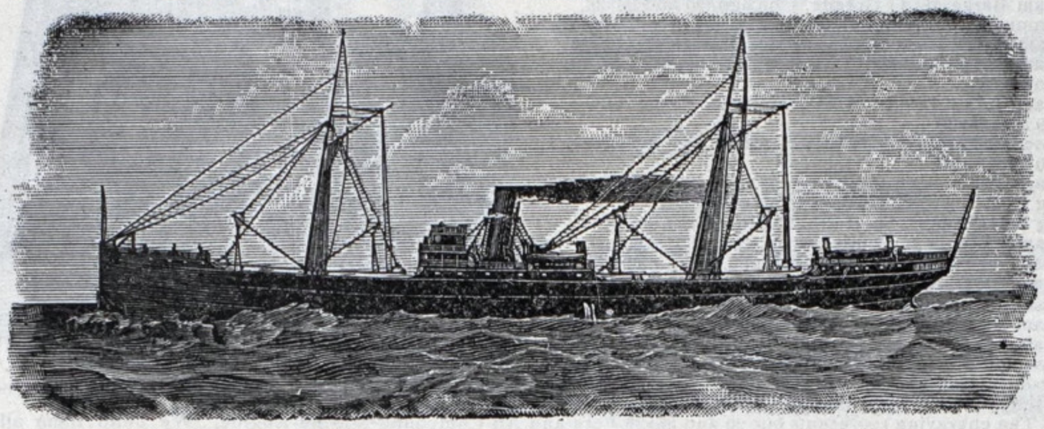

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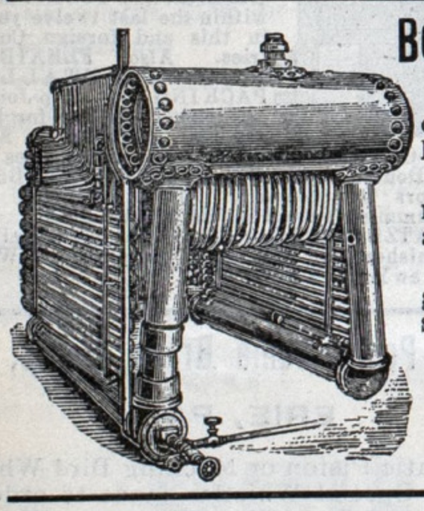

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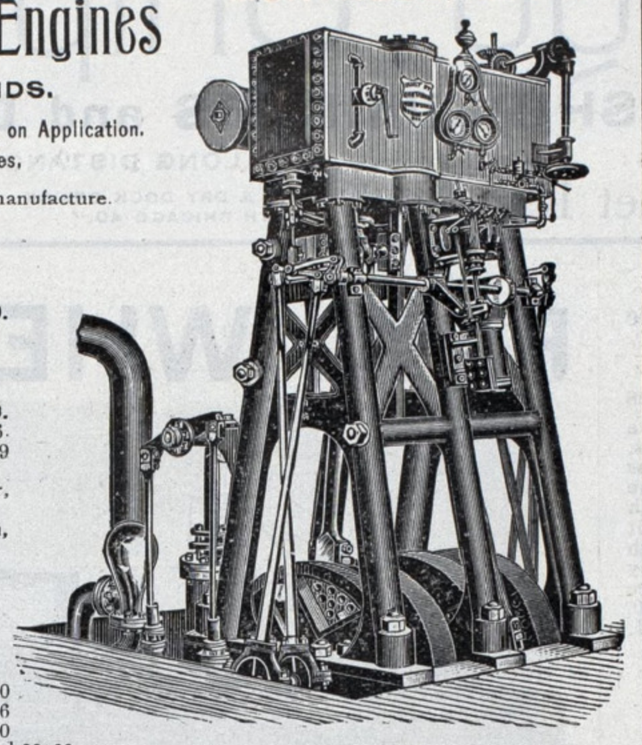

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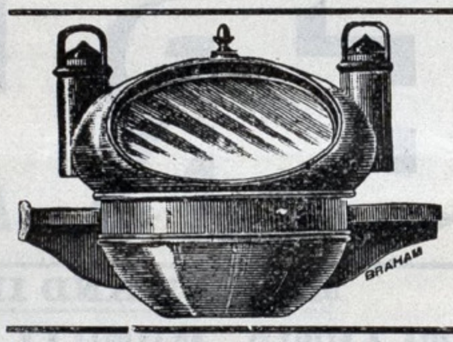


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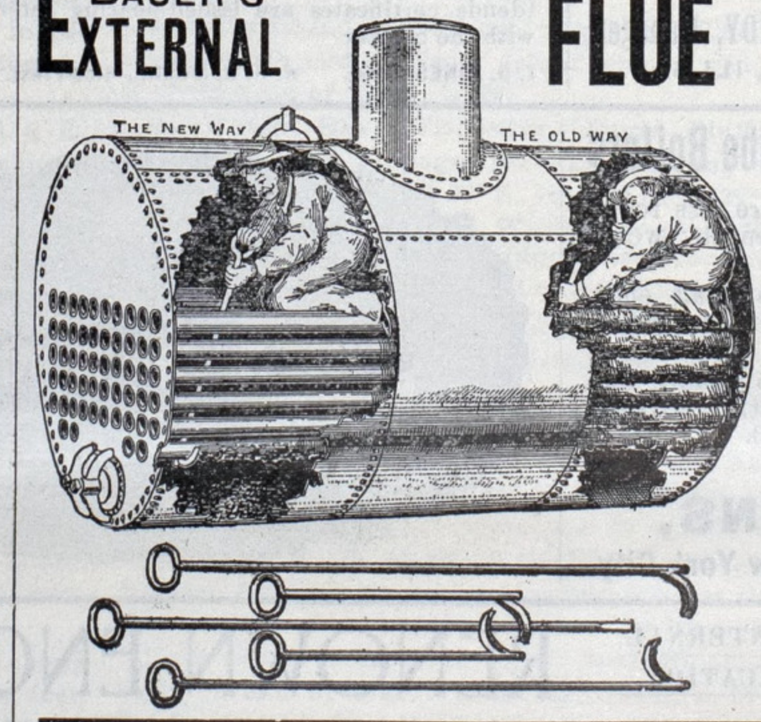


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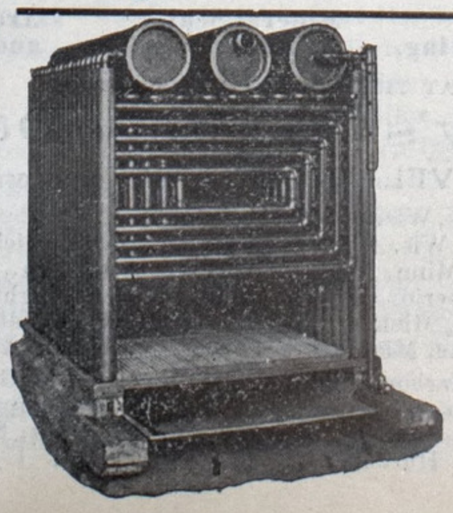

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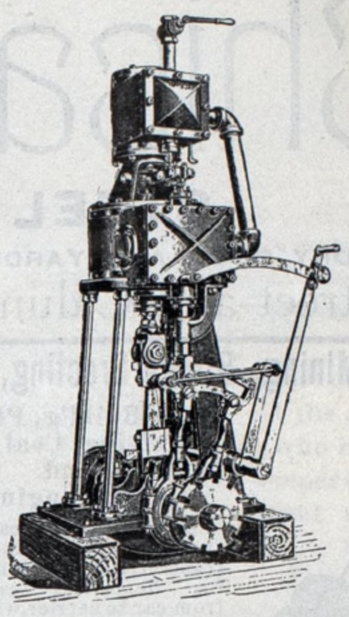

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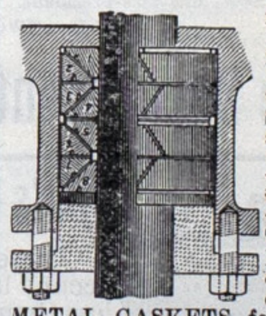

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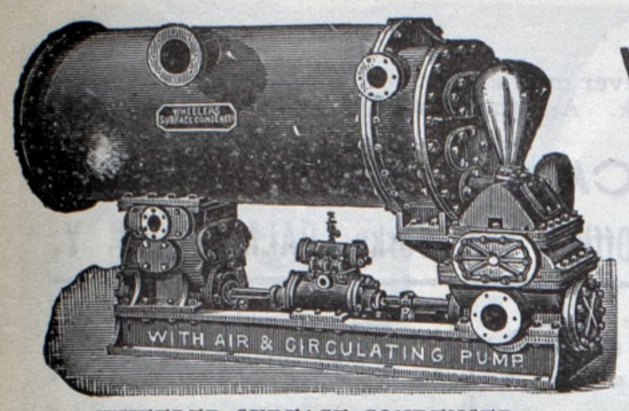


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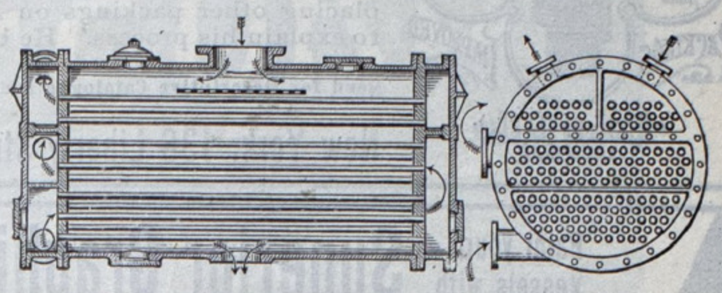

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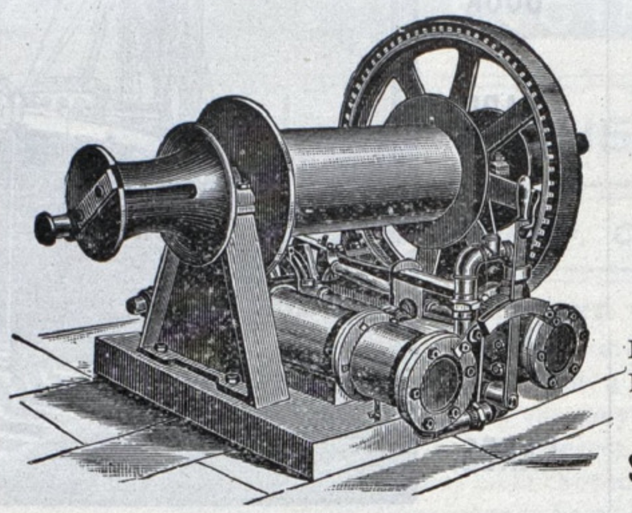

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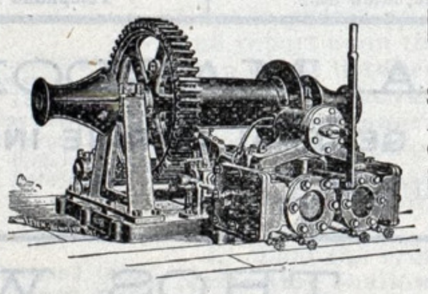

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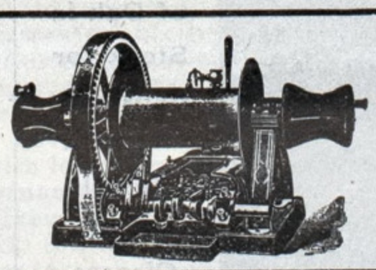

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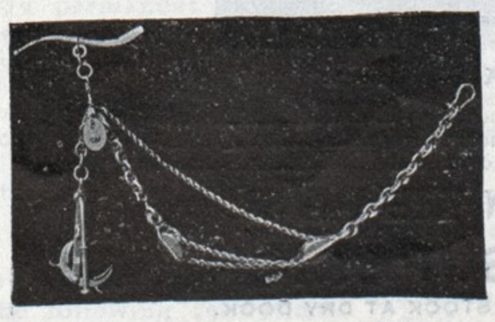

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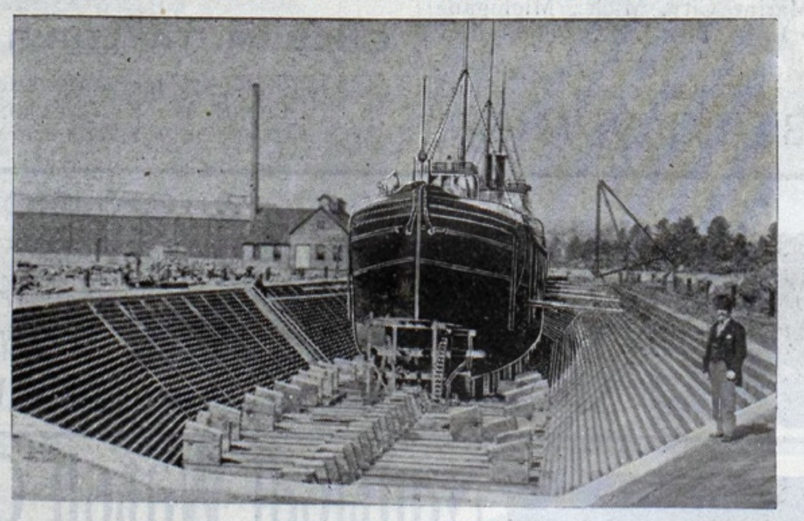

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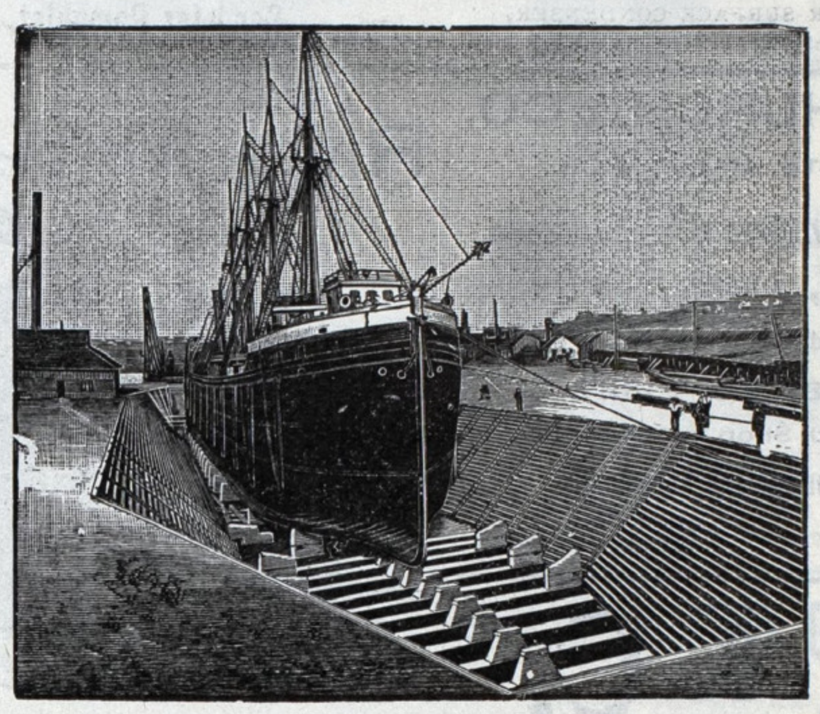

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